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PRIORITY

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Dated

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Patents Form 1 THE PATENT OFFICE

Patients Act 1977 (Rule 16)

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E752293-1 C89826 P01/7700 0.00-0232

The Patent Office

Cardiff Road Newport Gwent NP9 1RH

Your reference

RAZOR

Patent application number (The Patent Office will fill in this part) OT CET 2007

0222712.2

3. Full name, address and postcode of the or of each applicant (underline all surnames)

WILLIAM インクいよりとイ DENNE

Patents ADP number (if you know it)

LOB CONTROL STREET

CILLAT SHELFOND

THE LANGE HOUSE

If the applicant is a corporate body, give the country/state of its incorporation

CAMBRIDGE

CB2 5R2

Title of the invention

ZIRCONIA RAZOR

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (ipcluding the postcode)

IN

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number (if you know is)

Date of filing (day / month / year)

N/A

7. If this application is divided or otherwise derived from an carlier UK application, give the number and the filing date of the carlier application

Number of earlier application

Date of filing (day / month / year)

NIA

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' H:

a) any applicant named in part 3 is not an inventor, or

b) there is an inventor who is not named as an applicant, or

 c) any named applicant is a corporate body. See note (d))

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nts Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

Claim(s)

Abstract

Drawing(x)

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of Inventorship and right to grant of a patent (Patents Form 7/77)

Remest for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Porm 10/77)

> Any other documents (please specify)

I/We request the grant of a patent on the basis of this application.

Date Or /our/or

12. Name and daytime telephone number of person to contact in the United Kingdom

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11.

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ZIRCONIA RAZOR FOIL

Electric razors have been in use for many decades. They comprise a pierced foil and cutter. The foil is generally electroformed from nickel, which provides a very sharp edge but of limited hardness.

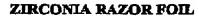
According to the present invention, there is an electric razor foil made from zirconia ceramic. The zirconia may be partially or fully stabilised. The foil may be fabricated by screen printing the foll plan form onto a hydrophilic surface with a zirconia based ink, such that flow of the ink under surface tension forces generates very sharp edges to the ceramic foil. The planar hydrophilic surface may be combustible so that it vanishes during firing. The surface is preferably a plastic film of good surface finish. 10 The foil network may be biaxially extensible to conform to the skin. The cutter may also be in the form of a zirconia foil. The zirconia print and plastic film may be formed prior to firing. Vacuum forming may be appropriate. Appropriate binders and plasticisers in the zirconia ink may stop cracking of the ceramic print during the 15 forming process.

Electric razor foils are generally made by electroforming nickel. This is a relatively expensive process and the hardness of the resulting nickel cutting edges is not as great as it might be.

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Partially stabilised zirconia has the hardness and toughness of tool steel. It has excellent wear characteristics and takes a very keen edge. While it is much more expensive, the quantity in a razor foil is minimal and it may be fabricated more cheaply than electroforming.

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A razor foil pattern may be precisely screen printed onto a plastic film with a zirconia ink. If the film is slightly hydrophilic it may be arranged, by controlling the ink properties, that the edges of the print may run slightly under the influence of surface tension forces to provide an extremely sharp edge. Even a low cost plastic film may have a surface finish approaching optical quality and the zirconia print will accurately reproduce this.

The printed plastic film may be fired in the conventional manner. The plastic will burn away at a low temperature and the zirconia will form a very thin foil of extreme toughness. It will maintain its sharpness for a very long while.

It is possible to print the foil pattern in a manner that permits biaxial extension to follow the contours of the skin. It is also possible to create a cutter in foil form which will follow the outer foil and provide a flexible cutting surface.

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The printed plastic may be vacuum formed if desired. This permits the forming of the profiled cutters used in current multi head shavers. The form may also be exploited to assist with maintaining dimensional stability during the firing process.

ZIRCONIA RAZOR FOIL

Abstract

Stabilised or partially stabilised zirconia paste may be screen printed onto hydrophilic plastic film in the form of a mesh. On firing, this may become a very sharp foil for electric razors with excellent wear and flexibility characteristics.

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